IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Inventorship... Zybura, et al.
Applicant .... Microsoft Corporation
Group Art Unit 2166
Examiner ....Channavajjala
Attorney's Docket No. MS1-1688US
Title: Incremental Non-Chronological Synchronization of Namespaces

APPEAL BRIEF

To: Commissioner for Patents
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Pursuant to 37 C.F.R. §41.37, Applicant hereby submits an appeal brief

for application 10/669,866, filed September 25, 2003, along with a one-month

extension of time, extending the period for response from March 8, 2007 to April 8,

2007. Accordingly, Applicant appeals to the Board of Patent Appeals and

Interferences seeking review of the Examiner's rejections.

Appeal Brief Items	**Page**

(1)   Real Party in Interest

The real party in interest is Microsoft Corporation, the assignee of all right, title and interest in and to the subject invention.

(2)   Related Appeals and Interferences

Appellant is not aware of any other appeals, interferences, or judicial proceedings which will directly affect, be directly affected by, or otherwise have a bearing on the Board's decision to this pending appeal.

(3)   Status of Claims

Claims 1-33 stand rejected and are pending in the Application. Claims 1-33 are set forth in the Appendix of Appealed Claims on page 36.

(4)   Status of Amendments

A first Office Action was issued on April 4, 2006.

A Response was filed on July 5, 2006. No claims were amended.

A Final Office Action was issued on October 6, 2006.

A Notice of Appeal was filed on January 8, 2007.

(5)   Summary of Claimed Subject Matter

A concise explanation of each of the independent claims is included in this Summary section, including specific reference characters, if any. These specific reference characters are examples of particular elements of the drawings for

certain embodiments of the claimed subject matter and the claims are not limited to solely the elements corresponding to these reference characters.

With regard to claim 1, a method for synchronizing information in namespaces comprising: receiving an indication of a change to information in a first namespace (Fig. 5 (501, 502); page 16, lines 14-18); based on the indication, determining if an entity exists in a second namespace related to the information (Fig. 5 ("synchronize"); page 8, lines 11-22; page 16, lines 20-21); if so, determining if the entity has a characteristic that conflicts with the information (Fig. 5 (521, 522); page 16, line 21, through page 17, line 1); and if a conflict exists, modifying the entity to resolve the conflict prior to applying the change to the second namespace (Fig. 5 (522, 523); page 17, lines 1-11).

With regard to claim 13, a method for synchronizing information in namespaces, comprising: receiving an indication of a change to information in a first namespace (Fig. 7 (701, 702, 703); Page 18, lines 16-19); based on the indication, determining if an entity exists in a second namespace related to the information (Fig. 7 ("synchronize"); page 8, lines 11-22; page 18, lines 21-22); if not, creating a representation of the entity within the second namespace (Fig. 7 (721, 722); page 18, line 23, through page 19, line 6).

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With regard to claim 21, a technique for synchronizing entities within two namespaces, comprising: while synchronizing the two namespaces (Fig. 6 ("synchronize"); page 8, lines 11-22; page 17, lines 22-23): identifying a conflict between a change notification received from a first namespace and a state of information within a second namespace (Fig. 6 (621, 622); page 17, line 23, through page 18, line 2); creating a temporary entity within the second namespace that allows the synchronization to proceed without interference by the conflict (Fig. 6 (622, 630); page 18, lines 2-3); and if the conflict becomes resolved such that the temporary entity is no longer necessary, removing the temporary entity (Fig. 6 (622, 623); page 18, lines 3-6).

With regard to claim 24, a computer-readable medium encoded with a data structure (Fig. 8; page 21, lines 1023; page 23, lines 13-15), comprising: a plurality of entities (Fig. 4 (450, 451), each entity having a first field having a name, the name being unique across each entity in the data structure (Fig. 3 (310, 311, 321); page 12, lines 6-9); a second field having an identity, the identity being globally unique (Fig. 3 (310, 312, 322); page 12, lines 9-11); and a third field having a phantom property (Fig. 3 (310, 316); page 13, lines 6-7), the phantom property being operative to distinguish between a first state of the entity and a second state of the entity (page 13, line 6, through page 14, line 9).

With regard to claim 25, a computer-readable medium having computer-executable components (Fig. 8; page 21, lines 10-23), comprising: a synchronization environment having an associated external namespace (Fig. 1 (150); page 4, lines 15-16; Fig. 2 (150); page 7, lines 17-19), an associated central namespace (Fig. 1 (102); page 4, lines 14-16), and a synchronization mechanism (Fig. 1 (110, 120); page 6, lines 1-8), the synchronization mechanism being configured to receive change information from the external namespace that identifies a plurality of changes to at least one object in the external namespace (Fig. 2 ("change data"); page 6, lines 1-8; page 7, lines 17-19; page 8, line 11, through page 9, line 23), the synchronization mechanism being configured to receive the change information in a first order that differs from a second order (page 10, lines 12-19), the second order being the temporal order in which the changes occurred to the at least one object in the external namespace (page 10, lines 12-19), the synchronization mechanism further comprising a name resolving component (Fig. 4; page 14, line 11, through page 15, line 8; page 6, lines 1-8) and a placeholder component (Fig. 7 (731); page 6, lines 1-8), the name resolving component being operative to avoid name collisions (page 14, line 11, through page 15, line 8) and the placeholder component being operative to avoid dangling references (Fig. 7; page 18, line 12, through page 19, line 6).

(6)   Grounds of Rejection to be Reviewed on Appeal

Claims 1, 13, 21, 24 and 25 stand provisionally rejected under the doctrine of obviousness-type double patenting for allegedly being unpatentable over claims 1, 13, 22 and 26 in co-pending Application No. 10/671,408.

The drawings stand rejected and/or objected to for allegedly failing to show every feature of the invention specified in the claims.

Claims 1-33 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter.

Claims 1-15, 20-23, and 25-31 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 6,061,743 to Thatcher, et al. (hereinafter "Thatcher") in view of U.S. Patent Pub. No. 2003/0131104 to Karamanolis, et al. (hereinafter "Karamanolis").

Claims 16-19 and 32-33 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Thatcher in view of Karamanolis and further in view of U.S. Patent No. 6,154,212 to Eick, et al. (hereinafter "Eick").

Claim 24 stands rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Thatcher in view of Eick.

(7)   Argument

A.   Applicant requests that the obviousness-type double patenting rejection be held in abeyance.

Applicant respectfully requests that the provisional obviousness-type double patenting rejection of claims 1, 13, 21, 24 and 25 be held in abeyance until a notice of allowable subject matter is received in one of the applications.

B.   The objections to the drawings are inappropriate and should be withdrawn.

In the Final Office Action of October 6, 2006 (hereinafter "Final Office Action"), the Office alleges that the drawings in the present Application fail to

show every feature of the invention specified in the claims, and specifically the subject matter recited in claim 1. However, the precise nature of the Office's complaint with respect to the drawings is unclear at best. The Office neither states that the drawings are rejected or objected to. Nonetheless, Applicant respectfully disagrees that the drawings fail to show every feature of the invention specified in the claims and submits that the subject matter recited in claim 1 is shown in the drawings as presented in the present Application.

Specifically, Fig. 5 illustrates one embodiment of the subject matter recited in claim 1. First, one example of the feature "receiving an indication of a change to information in a first namespace" is shown in Fig. 5 at 501 and 502, with respect to the buffer namespace. Further, the feature of "based on the indication, determining if an entity exists in a second namespace related to the information" is shown in Fig. 5 as the "synchronize" aspect. Synchronization is discussed in Applicant's specification at pages 8-11, a section of which is excerpted below:

> A process termed synchronization occurs to reconcile the external entities within the data sources with their corresponding central entities within the metadirectory 102. For instance, in this example the external entity 250 is associated with the buffer entity 260. **Through the synchronization process, modifications represented in the external entity 250, as well as perhaps other external entities, become reflected in the buffer entity 260.** By creating this **synchronized relationship** between two namespaces (e.g., the buffer 221 and the DSA 150), the pair of namespaces may be referred to as "correlated namespaces."

Specification at page 8, lines 11-18 (emphasis added).

Thus, with respect to Fig. 5, the "synchronize" act determines that entities 530 and 531 in second namespace Core 211 are related to the change information indicated with respect to entities 510 and 511 in first namespace buffer 221.

Still further, the feature of "if so, determining if the entity has a characteristic that conflicts with the information" is shown in Fig. 5 at 521 and 522 and is also part of the discussed synchronization process. Applicant's specification explains that, with respect to 521 and 522, "the first change that occurs in the buffer 221 is that the first entity 530 is renamed from Alpha to Beta, thus resulting in a name conflict." Specification at page 16, lines 23-25. Finally, the feature of "if a conflict exists, modifying the entity to resolve the conflict prior to applying the change to the second namespace" is shown in Fig. 5 at 522 and 523. In discussing these aspects of Fig. 5, Applicant's specification explains that:

> Accordingly, the second entity 531 is identified as transient [i.e., modifying entity 531] in an appropriate manner, resulting in state 522. As described above, the name of the second entity 531 is changed in some fashion that prevents the two entities from sharing the same name. Subsequently, a change is received that renames the second entity 531 from Beta to Tango [i.e., "applying the change to the second namespace"]. Thus, the transient state of the second entity 531 is changed to non-transient, and its name is changed to Tango, resulting in state 523.
>
> Specification at page 17, lines 1-7.

Accordingly, Applicant submits that figure 5 illustrates one embodiment of the subject matter recited in claim 1 and that the Office's objection to the drawings should be withdrawn.

C.   The rejection of claims 1-33 under 35 U.S.C. § 101 is improper and should be withdrawn.

Claims 1-33 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter.

As to independent claim 1, the claim recites a method for synchronizing information in namespaces, comprising:

- receiving an indication of a change to information in a first namespace;
- based on the indication, determining if an entity exists in a second namespace related to the information;
- if so, determining if the entity has a characteristic that conflicts with the information; and
- if a conflict exists, modifying the entity to resolve the conflict prior to applying the change to the second namespace.

The Office argues that, "in light of the disclosure", claim 1 is directed to an abstract idea in that the method is "software per se." Final Office Action at page 4. The Office further argues that the subject matter of claim 1 fails to produce a useful, concrete and tangible result. Applicant respectfully disagrees and submits that claim 1 complies with the requirements of § 101.

As pointed out by the Office, abstract ideas are not patentable subject matter under § 101. However, AT&T Corp. v. Excel Communications, Inc., explains that if an abstract idea is employed in a process that achieves a "new and useful end", the *process is* patentable subject matter, even if the idea by itself would not be. 172 F.3d 1352, 1357 (1999). In AT&T, the Court looked at the specification and found that the environment and use of the claimed subject matter

provided a useful, concrete and tangible result. That result, however, was not specifically recited in the claim. Rather, it was described in the specification.

Likewise, in the case at hand, Applicant's specification clearly describes the utility and tangibility of the claimed subject matter:

> [M]echanisms and techniques are described for enabling *incremental non-chronological synchronization of namespaces*. In an environment, entities must have unique names within a namespace and entities may only refer to entities that actually exist within the namespace. Synchronizing two such namespaces involves providing a mechanism for indicating that an entity has been created because a reference to that entity has been made even though that entity does not yet exist. At such time as the entity is formally created, the indication is removed. Synchronizing two such namespaces also involves providing a mechanism for indicating that an entity's unique name in the namespace has been compromised through the synchronization process.

Specification at page 2 (emphasis added).

Applicant's specification further explains that:

> Each data source [i.e., namespace] includes many objects, with each object containing information. For this discussion, each object may be thought of as a body of information, such as information about an individual (e.g., name, address, salary), a mailing list (members), an e-mail account (e-mail address), a corporate asset (serial number), or the like. For example if DSA 150 were a human resources database, then objects within DSA 150 may correspond to employees, and each employee may have characteristics such as an employee number, a manager, an office location, and the like.

> There may also be an object in another data source that pertains to the same body of information, but includes slightly different characteristics or information. For example, DSB 160 may be an information technology server that includes information about the

logon accounts of employees. Accordingly, there may be a corresponding object within DSB 160 for each or many of the objects in DSA 150. However, the particular body of information for the objects within DSB 160 would be slightly different than those within DSA 150. Collectively, the information associated with a particular body of information are (sic) sometimes referred to as "identity data" or the like.

Specification at page 4, line 16, through page 5, line 9.

Among other things, and in light of Applicant's specification, the embodiment of claim 1 allows for the incremental and non-chronological synchronization of namespaces, thus producing at least the useful result of properly synchronized namespaces. For example, as discussed in the above excerpt, this could allow for the synchronization of a human resources database with an information technology server. Accordingly, in the above excerpts as throughout the document, it is evident that the claimed subject matter has a specifically described useful, concrete and tangible result and application. In light of this discussion, Applicant respectfully requests that the § 101 rejection of claim 1 be withdrawn.

As to dependent claims 2-12, the Office has further rejected these claims based on the same analysis presented for claim 1. However, Applicant submits that claim 1 complies with § 101 and as such, the further rejections of claims 2-12 should be withdrawn.

As to independent claim 13, the claim recites a method for synchronizing information in namespaces, comprising [emphasis added]:

- receiving an indication of a change to information in a first namespace;

- based on the indication, **determining if an entity exists in a second namespace related to the information;**
- if not, *creating* **a representation of the entity within the second namespace.**

The Office argues that claim 13 is directed to an abstract idea in that the method is "software per se" and further argues that the subject matter of claim 13 fails to produce a useful, concrete and tangible result. Final Office Action at page 5. However, Applicant respectfully disagrees and submits that claim 13 complies with the requirements of § 101. As explained above, Applicant's Specification is replete with examples and explanations as to the utility of the particular embodiments represented in Applicant's claims. Further, with respect to claim 13, the claim recites at least the useful, concrete, and tangible results of **determining if an entity exists in a second namespace related to the information,** and if not, *creating* **a representation of the entity within the second namespace.** As such, Applicant submits that claim 13 complies with the requirements of § 101 respectfully requests that the rejection of claim 13 under § 101 be withdrawn.

As to dependent claims 14-20, the Office has further rejected these claims based on the same analysis presented for claim 13. However, Applicant submits that claim 13 complies with § 101 and as such, the further rejections of claims 14-20 should be withdrawn.

As to independent claim 21, the claim recites a technique for synchronizing entities within two namespaces, comprising:

- while synchronizing the two namespaces:
  - o identifying a conflict between a change notification received from a first namespace and a state of information within a second namespace;

- creating a temporary entity within the second namespace that allows the synchronization to proceed without interference by the conflict; and
- if the conflict becomes resolved such that the temporary entity is no longer necessary, removing the temporary entity.

The Office argues that claim 21 is directed to an abstract idea in that the method is "software per se", and further argues that the subject matter of claim 21 fails to produce a useful, concrete and tangible result. Final Office Action at page 6. However, Applicant respectfully disagrees and submits that claim 21 complies with the requirements of § 101.

As explained above, Applicant's Specification is replete with examples and explanations as to the utility of the particular embodiments represented in Applicant's claims. Further, claim 21 recites at least the useful, concrete, and tangible results of **synchronizing two namespaces, identifying a conflict, creating a temporary entity**, and **removing a temporary entity**. As such, Applicant submits that claim 21 complies with the patentability requirements of § 101 and respectfully requests that the rejection of claim 21 under § 101 be withdrawn.

As to dependent claims 22-23, the Office has further rejected these claims based on the same analysis presented for claim 21. However, Applicant submits that claim 21 complies with § 101 and as such, the further rejections of claims 22-23 should be withdrawn.

As to independent claim 24, the claim recites a computer-readable medium encoded with a data structure, comprising:

- a plurality of entities, each entity having

- a first field having a name, the name being unique across each entity in the data structure;
- a second field having an identity, the identity being globally unique; and
- a third field having a phantom property, the phantom property being operative to distinguish between a first state of the entity and a second state of the entity.

The Office argues that claim 24 is directed to an abstract idea in that the method is "software per se", that the subject matter of claim 24 fails to produce a useful, concrete and tangible result, and that the subject matter of claim 24 is not stored on a suitable computer readable medium. Final Office Action at pages 7-8.

As to the allegations that claim 24 is an abstract idea and lacks utility, Applicant disagrees and points out that claim 24 recites a computer-readable medium encoded with a data structure. The MPEP specifies that:

[A] claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, *and is thus statutory*.

MPEP § 2106.01(I) [emphasis added].

As to the allegation that the subject matter of this claim is not stored on a suitable computer readable medium, Applicant respectfully disagrees and points to the plain language of the claim, which begins by reciting "[a] computer-readable medium encoded with a data structure...." Thus the plain language of the claim contradicts the Office's argument in that the claim recites that a data structure is indeed stored (encoded) on a computer-readable medium. Accordingly, and at

least for the reasons discussed above, Applicant submits that claim 24 complies with the requirements of § 101 and that the § 101 rejection should be withdrawn.

As to independent claim 25, the claim recites a computer-readable medium having computer-executable components, comprising:

- a synchronization environment having an associated external namespace, an associated central namespace, and a synchronization mechanism, the synchronization mechanism being configured to receive change information from the external namespace that identifies a plurality of changes to at least one object in the external namespace, the synchronization mechanism being configured to receive the change information in a first order that differs from a second order, the second order being the temporal order in which the changes occurred to the at least one object in the external namespace, the synchronization mechanism further comprising a name resolving component and a placeholder component, the name resolving component being operative to avoid name collisions and the placeholder component being operative to avoid dangling references.

The Office argues that that claim 25 is directed to an abstract idea in that the method is "software per se", that the subject matter of claim 25 fails to produce a useful, concrete and tangible result, and that the subject matter of claim 25 is not stored on a suitable computer readable medium. Final Office Action at pages 8-9.

As to the allegations that claim 25 is an abstract idea and lacks utility, Applicant restates the arguments presented above with respect to the previous claims and submits that, in light of Applicant's specification, the subject matter of claim 25 complies with the § 101 requirements for statutory subject matter.

As to the allegation that the subject matter of this claim is not stored on a suitable computer readable medium, Applicant respectfully disagrees and points to

the plain language of the claim, which begins by reciting "[a] computer-readable medium having computer-executable components...." Thus the very language of the claim contradicts the Office's argument. In order for a computer-readable medium to have computer-executable components, said components would necessarily have to be stored on the computer-readable medium. Accordingly, and at least for the reasons discussed above, Applicant submits that claim 25 complies with the requirements of § 101 and that the § 101 rejection of claim 25 should be withdrawn.

As to dependent claims 26-33, the Office has further rejected these claims based on the same analysis presented for claim 25. However, Applicant submits that claim 25 complies with § 101 and as such, the further rejections of claims 26-33 should be withdrawn.

D.   The rejections under 35 U.S.C. §103(a) over Thatcher and Karamanolis do not establish a *prima facie* case of obviousness.

The discussion below proceeds as follows. First, a section entitled "The §103 Standard" is provided and describes the standard by which obviousness rejections are made out. Following this, a section entitled "The Claims" is provided and presents Applicant's reasoning as to why the Office has not established a *prima facie* case of obviousness.

The §103 Standard

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the

art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).*

It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fritch, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992).*

A factor cutting against a finding of motivation to combine or modify the prior art is when the prior art *teaches away* from the claimed combination. A reference is said to teach away when a person of ordinary skill, upon reading the reference, would be led in a direction divergent from the path that the applicant took. *In re Gurley*, 31 USPQ 2d 1130, 1131 (Fed. Cir 1994).

The need for specificity pervades this authority. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed").

The Claims

Independent Claim 1

Independent claim 1 recites a method for synchronizing information in namespaces, comprising:

- receiving an indication of a change to information in a first namespace;
- based on the indication, determining if an entity exists in a second namespace related to the information;
- if so, determining if the entity has a characteristic that conflicts with the information; and
- if a conflict exists, modifying the entity to resolve the conflict prior to applying the change to the second namespace.

The Office argues that the subject matter of this claim is obvious over Thatcher in view of Karamanolis. Applicant respectfully disagrees and submits that the Office has failed to establish a *prima facie* case of obviousness with respect to this claim for at least two reasons. First, the Office has failed to establish a proper motivation to combine Karamanolis with Thatcher. Second, even if, for the sake of argument, the references could be combined, the cited combination of references still fails to disclose or suggest all of this claim's recited features.

First, Applicant submits that one of ordinary skill in the art would not have been motivated to modify the teachings of Karamanolis in view of the teachings of Thatcher. The motivation provided by the Office to combine these references is to:

[A]llow users of Thatcher to perform[] namespace operations by incorporating "log records" to track events of both success as well as

failure records as suggested by Karamanolis...particularly conflicts between link and unlink operations, furthermore, resolving the conflicts before and after the initiated link operations related to same namespace and target objects...also avoid locking distributed resources by serializing operations at each partition, thus bringing the advantages of "reduces communications overhead, reduces synchronous I/O and increases operations concurrency...."

Office Action at pages 13-14.

Applicant submits that this motivation is insufficient in that it fails to establish the desirability of the suggested combination. The mere fact that particular references *can* be combined or modified does not render the resultant combination obvious unless the prior art also suggests the *desirability* of the combination. See In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Thatcher suffers from no defect or deficiency that would make it desirable to add the teachings of Karamanolis. The Office's motivation argues that Thatcher would benefit from the addition of Karamanolis' "log records to track events of both success as well as failure". However, Thatcher has already considered the phenomena of event successes and failures and thus would not benefit from the addition of this feature. Thatcher specifically discloses that:

When a change is made locally to an entry in the distributed directory, the change is detected and a process in the replication system on the server wakes up to propagate the change to all the replicas of the partition. Preferably, there is a brief time delay to allow a cluster of updates to be propagated in one session. This propagation proceeds one replica at a time through the replica list of a partition. After a server successfully sends all pending updates to one replica (or *if the operation fails*), it goes on to the next replica until all replicas have been updated. *Replicas not updated in one round of the synchronization process are rescheduled for a later synchronization cycle.*

Thatcher at column 6, line 62, through column 7, line 6 (emphasis added).

Accordingly, Thatcher discloses that if an update operation fails, it is simply rescheduled for a later synchronization cycle. Thatcher further discusses that:

> [O]bituaries keep track of information pending transmission to other servers. Obituaries are attribute values not visible to clients, but are used in server-server exchanges. Since obituaries are attribute values, they are synchronized using the same mechanism as the updates and are replicated across the distributed directory.

Thatcher at column 7, lines 6-11.

Thus, Thatcher discloses that information in a pending update operation is tracked by an obituary. The addition of a log file to log successes and failures would simply be superfluous in light of Thatcher's ability reschedule failed update operations for a later synchronization cycle and to further track update information via the disclosed obituary. In point of fact, by requiring Thatcher to further log all of its update processes (successes and failures), the addition of the teachings of Karamanolis would not "reduce communications overhead", as suggested by the Office, but would actually *increase* communications overhead by adding an extraneous feature that adds no apparent benefit to Thatcher's update process.

Accordingly, Applicant submits that the Office's *prima facie* case of obviousness with respect to claim 1 fails for lack of a proper motivation to combine the cited references and this claim is allowable.

Second, Applicant submits that the Office's *prima facie* case of obviousness further fails because even if, for the sake of argument, the references could be combined, the cited combination of references still fails to disclose or suggest all of the features recited in claim 1. Specifically, neither Thatcher nor Karamanolis discloses or suggests the features of:

- determining if the entity has a characteristic that conflicts with the information; and
- if a conflict exists, modifying the entity to resolve the conflict prior to applying the change to the second namespace.

The Office appears to rely on Karamanolis for these features and argues that "Karamanolis specifically teaches conflicts between link and unlink operations related to a namespace, further resolving conflicts due to failure occurs (sic) during execution...." Office Action at pages 13-14. The Office further cites to Karamanolis at, among other places, paragraph 72. This paragraph is excerpted below:

> **Conflicts between link and unlink *operations*** are not an issue in the absence of failures because the operations are serialized at the namespace site. However, when a failure results in incomplete execution of operations, there are two cases of conflicts to be considered. The first case occurs when a link operation fails at point X3 (see FIGS. 5 and 7), and before recovery is initiated an unlink operation is started for the same namespace object. The second case occurs when an unlink operation fails at points X2 or X3 (see FIGS. 6 and 8), and before recovery is initiated a link operation is started for the same namespace and target objects.
>
> Karamanolis at paragraph 71 [emphasis added].

Thus, Karamanolis simply discusses conflicts between link and unlink *operations*, not "determining if [an] **entity** has a characteristic that conflicts with the information" or "**modifying the entity** to resolve the conflict prior to applying the change to the second namespace." Applicant's specification explains that "[g]enerally stated, entities are objects that include any arbitrary collection of data (e.g., current values, change information, etc.) about the bodies of information that reside in the various data sources." Specification at page 6, line 25, through page 7, line 2. The cited combination of references simply fails to recite these particular features of claim 1.

Accordingly, and for the reasons discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 1 and claim 1 is allowable.

Dependent Claims 2-12

Claims 2-12 depend from claim 1 and thus are allowable as depending from an allowable base claim. The Office has also rejected these claims as being obvious over Thatcher in view of Karamanolis. However, as discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 1 for two primary reasons. First, the Office has failed to provide a proper motivation to combine the cited references. Second, the cited combination of references fails to disclose or suggest all of the claim's recited features. The further rejection of claims 2-12 fails to remedy these deficiencies. Accordingly, and at least for these reasons, claims 2-12 are allowable.

Independent claim 13

Independent claim 13 recites a method for synchronizing information in namespaces, comprising:

- receiving an indication of a change to information in a first namespace;
- based on the indication, determining if an entity exists in a second namespace related to the information;
- if not, creating a representation of the entity within the second namespace.

The Office argues that the subject matter of this claim is obvious over Thatcher in view of Karamanolis. Applicant respectfully disagrees and submits that the Office has failed to establish a *prima facie* case of obviousness with respect to this claim for at least two reasons. First, the Office has failed to establish a proper motivation to combine Karamanolis with Thatcher. Second, even if, for the sake of argument, the references could be combined, the cited combination of references still fails to disclose or suggest all of this claim's recited features.

First, and as discussed at length above with respect to claim 1, the Office has failed to provide a proper motivation to combine Karamanolis with Thatcher. In its arguments with respect to claim 13, the Office relies on the same motivation provided for claim 1. However, as discussed above with respect to claim 1, this motivation is insufficient to establish the desirability of the proposed combination. Accordingly, the Office's *prima facie* case of obviousness fails for the reason that the Office has failed to provide a proper motivation to combine the cited references.

Second, even if, for the sake of argument, the references could be combined, the Office's *prima facie* case of obviousness still fails because the cited combination of references fails to disclose or suggest all of the features of claim 13. Specifically, neither Thatcher nor Karamanolis discloses or suggests the features of:

- based on the indication, determining if an entity exists in a second namespace related to the information;
- if not, *creating a representation of the entity within the second namespace.*

In point of fact, the Office's rejection of claim 13 fails to address this particular feature. Nevertheless, Applicant has reviewed the references and submits that neither Thatcher nor Karamanolis discloses or suggests this feature, and particularly neither reference discloses or suggests *creating a representation of an entity within the second namespace.*

Accordingly, and for the reasons discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to this claim and this claim is allowable.

Dependent Claims 14-15 and 20

Dependent claims 14-15 and 20 depend from claim 13 and thus are allowable as depending from an allowable base claim. The Office has also rejected these claims as being obvious over Thatcher in view of Karamanolis. However, as discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 13 for two primary reasons. First, the Office

has failed to provide a proper motivation to combine the cited references. Second, the cited combination of references fails to disclose or suggest all of the claim's recited features. The further rejection of claims 14-15 and 20 fails to remedy these deficiencies. Accordingly, and at least for these reasons, claims 14-15 and 20 are allowable.

Independent Claim 21

Independent claim 21 recites a technique for synchronizing entities within two namespaces, comprising:

- while synchronizing the two namespaces:
  - identifying a conflict between a change notification received from a first namespace and a state of information within a second namespace;
  - creating a temporary entity within the second namespace that allows the synchronization to proceed without interference by the conflict; and
  - if the conflict becomes resolved such that the temporary entity is no longer necessary, removing the temporary entity.

The Office argues that the subject matter of this claim is obvious over Thatcher in view of Karamanolis. Applicant respectfully disagrees and submits that the Office has failed to establish a *prima facie* case of obviousness with respect to claim 21 for at least two reasons. First, the Office has failed to establish a proper motivation to combine Karamanolis with Thatcher. Second, even if, for the sake of argument, the references could be combined, the cited combination of references still fails to disclose or suggest all of the features recited in claim 21.

First, Applicant submits that the Office has failed to establish a proper motivation to combine Karamanolis with Thatcher. The motivation provided for claim 21 is verbatim the same motivation provided for claim 1. However, as discussed at length above, this motivation is simply insufficient to establish the desirability of the combination of Karamanolis and Thatcher.

Second, even if, for the sake of argument, the references could be combined, the cited combination of references still fails to disclose or suggest all of this claim's recited features. Specifically, the cited combination fails to disclose or suggest at least the features of:

- creating a temporary entity within the second namespace that allows the synchronization to proceed without interference by the conflict; and
- if the conflict becomes resolved such that the temporary entity is no longer necessary, removing the temporary entity.

The Office cites to Thatcher as disclosing these particular features. The section of Thatcher cited by the Office is excerpted below:

> When a change is made locally to an entry in the distributed directory, the change is detected and a process in the replication system on the server wakes up to propagate the change to all the replicas of the partition. Preferably, there is a brief time delay to allow a cluster of updates to be propagated in one session. This propagation proceeds one replica at a time through the replica list of a partition. After a server successfully sends all pending updates to one replica (or if the operation fails), it goes on to the next replica until all replicas have been updated. Replicas not updated in one round of the synchronization process are rescheduled for a later synchronization cycle. Also, obituaries keep track of information pending transmission to other servers. Obituaries are attribute values not visible to clients, but are used in server-server exchanges. Since

obituaries are attribute values, they are synchronized using the same mechanism as the updates and are replicated across the distributed directory.

Thatcher at column 6, line 62, through column 7, line 12.

Applicant submits that nowhere in this section, or indeed in the entirety of Thatcher, is disclosed or suggested the above-mentioned features. Applicant can find no discussion of a "*temporary entity* within a second namespace that allows a synchronization to proceed without interference by a conflict", or any mention of "if the conflict becomes resolved such that the temporary entity is no longer necessary, *removing the temporary entity*." These features are simply absent from the cited references.

Accordingly, and for the reasons discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 21 and claim 21 is allowable.

Dependent Claims 22-23

Dependent claims 22-23 depend from claim 21 and thus are allowable as depending from an allowable base claim. The Office has also rejected these claims as being obvious over Thatcher in view of Karamanolis. However, as discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 21 for two primary reasons. First, the Office has failed to provide a proper motivation to combine the cited references. Second, the cited combination of references fails to disclose or suggest all of the claim's recited features. The further rejection of claims 22-23 fails to remedy these

deficiencies. Accordingly, and at least for these reasons, claims 22-23 are allowable.

Independent Claim 25

Independent claim 25 recites a computer-readable medium having computer-executable components, comprising:

- a synchronization environment having an associated external namespace, an associated central namespace, and a synchronization mechanism, the synchronization mechanism being configured to receive change information from the external namespace that identifies a plurality of changes to at least one object in the external namespace, the synchronization mechanism being configured to receive the change information in a first order that differs from a second order, the second order being the temporal order in which the changes occurred to the at least one object in the external namespace, the synchronization mechanism further comprising a name resolving component and a placeholder component, the name resolving component being operative to avoid name collisions and the placeholder component being operative to avoid dangling references.

The Office argues that the subject matter of this claim is obvious over Thatcher in view of Karamanolis. Applicant respectfully disagrees and submits that the Office has failed to establish a *prima facie* case of obviousness with respect to this claim for at least two reasons. First, the Office has failed to establish a proper motivation to combine Karamanolis with Thatcher. Second, even if, for the sake of argument, the references could be combined, the cited combination of references still fails to disclose or suggest all of this claim's recited features.

First, Applicant submits that the Office has failed to establish a proper motivation to combine Karamanolis with Thatcher. The motivation provided for claim 25 is verbatim the same motivation provided for claim 1. However, as discussed at length above, this motivation is simply insufficient to establish the desirability of the combination of Karamanolis and Thatcher.

Further, even if, for the sake of argument, the references could be combined, Applicant submits that the cited combination of references still fails to disclose or suggest all of the features of claim 25. Specifically, neither reference discloses or suggests the feature of a placeholder component being operative to avoid dangling references. The Office cites to Thatcher as disclosing this particular feature and argues that, by discussing the use of Java, Thatcher discloses (sic):

> When a program contains a reference (or pointer) to a destroyed object is called a dangling reference (or dangling pointer) by disallowing the explicit destruction of objects, Java eliminates the problem of dangling references.

Office Action at page 20.

Whether or not Thatcher discloses eliminating the problem of dangling references, Thatcher nonetheless makes no mention of the creation of a **placeholder component** being operative to avoid dangling references. As discussed in Applicant's specification, a "placeholder state,...is essentially somewhere between an officially-created entity and a non-existent entity." Specification at page 13, lines 13-14. Thus, the cited references fail to disclose or suggest all of the features of claim 25.

Accordingly, and for the reasons discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 25 and claim 25 is allowable.

Dependent Claims 26-31

Dependent claims 26-31 depend from claim 25 and thus are allowable as depending from an allowable base claim. The Office has also rejected these claims as being obvious over Thatcher in view of Karamanolis. However, as discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 25 for two primary reasons. First, the Office has failed to provide a proper motivation to combine the cited references. Second, even if, for the sake of argument, the references could be combined, the cited combination of references still fails to disclose or suggest all of the features recited in claim 25. The further rejection of claims 26-31 fails to remedy these deficiencies. Accordingly, and at least for these reasons, claims 26-31 are allowable.

E.   The rejections under 35 U.S.C. §103(a) over Thatcher and Karamanolis and Eick do not establish a *prima facie* case of obviousness.

The sections below will discuss the claims rejected over Thatcher in view of Karamanolis and further in view of Eick. For a discussion of the relevant § 103 standard, Applicant references the previous section.

Dependent Claims 16-19

Dependent claims 16-19 depend from claim 13 and stand rejected as allegedly being obvious over Thatcher in view of Karamanolis and further in view of Eick. However, as discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 13 for the reasons that the Office has failed to provide a proper motivation to combine Karamanolis with Thatcher and the cited combination fails to disclose or suggest all of the features of claim 13. The further rejection of claims 16-19 over Thatcher in view of Karamanolis and further in view of Eick fails to remedy these deficiencies.

Still further, the cited combination of references fails to disclose or suggest the feature of a phantom entity, as recited in claims 16-18 explicitly and claim 19 by virtue of its dependence from claim 18. The Office argues in its rejection of these claims that Eick discloses this particular feature. However, Eick simply mentions that a "collapse operation allows a user to group sets of nodes and links into a 'phantom' aggregate node, while the expand operation reverses the collapse operation. Phantom nodes may be grouped recursively." Eick at column 7, lines 8-11. In contrast, Applicant's specification defines a phantom entity and explains that:

> The phantom attribute 316 is a Boolean-valued property 326 of the entity 310 used to indicate that the entity has not yet been officially "created" but yet must exist in the namespace because it has been referred to by another entity. Use of the phantom attribute allows the creation of a "placeholder state," which is essentially somewhere between an officially-created entity and a non-existent entity.

Specification at page 13, lines 9-14.

Accordingly, Eick fails to disclose or suggest a phantom entity as recited in these claims and defined in Applicant's specification. Thus, for the reasons discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claims 16-19 and these claims are allowable.

Dependent Claims 32-33

Dependent claims 32-33 depend from claim 25 and stand rejected as allegedly being obvious over Thatcher in view of Karamanolis and further in view of Eick. However, as discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 25 for the reasons that the Office has failed to provide a proper motivation to combine Karamanolis with Thatcher and the cited combination fails to disclose or suggest all of the features of claim 25. The further rejection of claims 32-33 over Thatcher in view of Karamanolis and further in view of Eick fails to remedy these deficiencies.

Still further, the cited combination of references fails to disclose or suggest the feature of a phantom object, as recited in claims 32-33. The Office argues in its rejection of these claims that Eick discloses this particular feature. However, as explained above in the discussion of dependent claims 16-19, Eick fails to disclose or suggest this particular feature. Thus, for the reasons discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claims 32-33 and these claims are allowable.

F.   The rejections under 35 U.S.C. §103(a) over Thatcher and Eick do not establish a *prima facie* case of obviousness.

The sections below will discuss the claims rejected over Thatcher in view of Eick. For a discussion of the relevant § 103 standard, Applicant references section D, above.

Independent Claim 24

Independent claim 24 recites a computer-readable medium encoded with a data structure, comprising:

- a plurality of entities, each entity having
  - a first field having a name, the name being unique across each entity in the data structure;
  - a second field having an identity, the identity being globally unique; and
  - a third field having a phantom property, the phantom property being operative to distinguish between a first state of the entity and a second state of the entity.

The Office argues that this claim is obvious over Thatcher in view of Eick. Applicant respectfully disagrees and submits that the Office has failed to establish a *prima facie* case of obviousness with respect to this claim for two reasons. First, the Office has failed to provide a proper motivation to combine Eick with Thatcher. Second, even if, for the sake of argument, the references could be combined, the combination of Thatcher and Eick still fails to disclose or suggest all of the features of claim 24.

With regard to the first reason, the motivation provided by the Office to combine these references is to:

[A]llow[] the users of Thatcher to implement the interface based on node and linking various namespaces in a hierarchical data structure, furthermore allowing users of Thatcher to use interface programming of Eick configure to support a range of viewing functions that including identification, selection, collapse, expand, reposition and transforming of namespace related objects, also allows user to group sets of nodes and links into "phantom" aggregate node that including flags associated with each object using high-performance language...thus substantially reduces the time and expense associated with developing network interface in synchronized with the network data....

Office Action at page 27.

However, Applicant submits that this motivation fails to establish the desirability of combining Eick with Thatcher primarily because Thatcher suffers from no defect or deficiency that requires that addition of Eick.

The Office argues above that Eick would allow Thatcher to implement an interface "based on node and linking various namespaces in a hierarchical data structure". However, Thatcher already utilizes an interface based on linked nodes with data arranged in a hierarchical structure (see figures 2 and 3 of Thatcher). Thus Thatcher does not require the addition of this feature.

The remainder of the motivation provided by the Office (excerpted above) simply recites several features from Eick and concludes that these would "substantially reduce[] the time and expense associated with developing network interface in synchronized with the network data." The Office provides no insight into the particular defects or deficiencies in Thatcher that would benefit from Eick and thus "reduce the time and expense" as argued by the Office. Thatcher appears to have fully provided for a network interface and for the ability to synchronize network data, and there is no indication that Eick's system and method is superior

to that discussed by Thatcher. Thus there is no indication as to why it would be desirable to combine Eick with Thatcher.

Further, the combination of Thatcher and Eick fails to disclose or suggest all of the features of claim 24. Specifically, the cited combination fails to disclose or suggest the feature of a third field having a **phantom property**, the phantom property being operative to distinguish between a first state of the entity and a second state of the entity. The Office cites to Eick as disclosing this particular feature. However, Eick simply discusses a:

> [C]ollapse operation [that] allows a user to group sets of nodes and links into a "phantom" aggregate node, while the expand operation reverses the collapse operation. Phantom nodes may be grouped recursively.

Eick at column 7, lines 8-11.

Eick further mentions that:

> The collapsing operation, for example, can then be implemented by linking a phantom node onto the list and attaching the collapsed entities as "children" of the phantom node.

Eick at column 7, lines 36-39.

Nowhere in these sections or elsewhere, however, does Eick disclose or suggest a phantom property being operative to distinguish between a first state of the entity and a second state of the entity, particularly in light of Applicant's discussion of phantom properties, excerpted above in section E.

Accordingly, for the reasons discussed above, the Office has failed to establish a *prima facie* case of obviousness with respect to claim 24 and claim 24 is allowable.
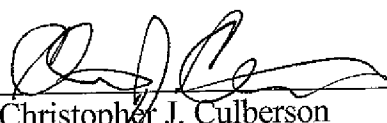
Conclusion

The Office's basis and supporting rationale for the objections and rejections discussed above are not supported by the teaching of the cited references. Applicant respectfully requests that the objections and rejections be overturned and that the pending claims be allowed to issue.

Respectfully Submitted,

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(8)   Appendix of Appealed Claims

1.   (Original) A method for synchronizing information in namespaces, comprising:

receiving an indication of a change to information in a first namespace;

based on the indication, determining if an entity exists in a second namespace related to the information;

if so, determining if the entity has a characteristic that conflicts with the information; and

if a conflict exists, modifying the entity to resolve the conflict prior to applying the change to the second namespace.

2.   (Original) The method of claim 1, wherein the indication of the change comprises a notice that another entity was added to the first namespace.

3.   (Original) The method of claim 2, wherein the characteristic comprises a name of the other entity.

4.   (Original) The method of claim 3, wherein the conflict comprises a name collision between the entity in the first namespace and the entity in the second namespace.

5. (Original) The method of claim 4, wherein modifying the entity in the second namespace comprises creating an indication that the characteristic of the entity in the second namespace has become invalid.

6. (Original) The method of claim 5, wherein creating the indication comprises associating with the entity in the second namespace an indication that the name of the entity in the second namespace is no longer valid.

7. (Original) The method of claim 1, wherein the information in the first namespace comprises an entity in the first namespace.

8. (Original) The method of claim 1, wherein modifying the entity comprises altering the characteristic of the entity to eliminate the conflict.

9. (Original) The method of claim 8, wherein the characteristic comprises a name of the entity, and wherein altering the characteristic comprises modifying the name of the entity.

10. (Original) The method of claim 9, wherein modifying the name comprises replacing the name with a unique identifier.

11. (Original) The method of claim 9, wherein modifying the name comprises setting a flag associated with the entity to indicate that the name of the entity is transient.

12. (Original) A computer-readable medium having computer-executable instructions for performing the method of claim 1.

13. (Original) A method for synchronizing information in namespaces, comprising:

receiving an indication of a change to information in a first namespace;

based on the indication, determining if an entity exists in a second namespace related to the information;

if not, creating a representation of the entity within the second namespace.

14. (Original) The method of claim 13, wherein the indication of the change comprises a notice of a reference to the entity in the second namespace.

15. (Original) The method of claim 14, wherein the reference indicates that the information in the first namespace refers to the entity in the second namespace.

16. (Original) The method of claim 15, wherein the representation of the entity comprises a phantom entity in the second namespace.

17. (Original) The method of claim 16, wherein the phantom entity includes a flag indicating the state of the phantom entity.

18. (Original) The method of claim 17, further comprising, receiving a second indication of a second change to information in the first namespace and in response to the second indication, modifying the state of the phantom entity.

19. (Original) The method of claim 18, wherein the second indication comprises an instruction to create the entity in the second namespace.

20. (Original) A computer-readable medium having computer-executable instructions for performing the method of claim 13.

21. (Original) A technique for synchronizing entities within two namespaces, comprising:

while synchronizing the two namespaces:

identifying a conflict between a change notification received from a first namespace and a state of information within a second namespace;

creating a temporary entity within the second namespace that allows the synchronization to proceed without interference by the conflict; and

if the conflict becomes resolved such that the temporary entity is no longer necessary, removing the temporary entity.

22.   (Original) The technique of claim 21, wherein the conflict becomes resolved by receiving a notice to delete the temporary entity.

23.   (Original) The technique of claim 21, wherein the conflict becomes resolved by receiving a notice to make the temporary entity permanent.

24.   (Original) A computer-readable medium encoded with a data structure, comprising:

a plurality of entities, each entity having

a first field having a name, the name being unique across each entity in the data structure;

a second field having an identity, the identity being globally unique; and

a third field having a phantom property, the phantom property being operative to distinguish between a first state of the entity and a second state of the entity.

25.   (Original) A computer-readable medium having computer-executable components, comprising:

a synchronization environment having an associated external namespace, an associated central namespace, and a synchronization mechanism, the synchronization mechanism being configured to receive change information from the external namespace that identifies a plurality of changes to at least one object in the external namespace, the synchronization mechanism being configured to

receive the change information in a first order that differs from a second order, the second order being the temporal order in which the changes occurred to the at least one object in the external namespace, the synchronization mechanism further comprising a name resolving component and a placeholder component, the name resolving component being operative to avoid name collisions and the placeholder component being operative to avoid dangling references.

26.   (Original) The computer-readable medium of claim 25, wherein the central namespace includes a plurality of objects that are correlated to a corresponding plurality of objects in the external namespace.

27.   (Original) The computer-readable medium of claim 25, wherein the name collision comprises an error corresponding to two objects in the central namespace having similar names.

28.   (Original) The computer-readable medium of claim 27, wherein the name resolving component comprises a pair of subspaces, one subspace for transient objects, and the other subspace for non-transient objects.

29.   (Original) The computer-readable medium of claim 28, wherein the transient objects comprise objects that have been identified as having a name that is no longer valid.

30. (Original) The computer-readable medium of claim 28, wherein the non-transient objects comprise objects that have not been identified as having a name that is no longer valid.

31. (Original) The computer-readable medium of claim 25, wherein the dangling reference comprises an error corresponding to one object in the central namespace referring to another object in the central namespace that does not yet exist.

32. (Original) The computer-readable medium of claim 31, wherein the placeholder component comprises an identifier on a phantom object in the central namespace.

33. (Original) The computer-readable medium of claim 32, wherein the phantom object comprises an object that is referred to by another object in the central namespace but which has not yet been formally created.

(9)   Evidence appendix. None

(10)   Related proceedings appendix. None